



BRAWIJAYA UNIVERSITY

Faculty of Mathematics and Natural Sciences

Physics Department

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Undergraduate Programme in Physics

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MODULE HANDBOOK

Last revised : 6 June 2019

Course Name:	Physics I /Fisika I
Module Level:	Bachelor (sarjana)
Code:	MAP 61101
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/Term:	1/ first year
Module Coordinator:	Achmad Hidayat
Lecturer(s):	Achmad Hidayat, Sri Herwiningsih, Arinto Yudi Ponco Wardoyo, Dionysius Joseph Djoko Herry Santjojo
Language:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course (Mata Kuliah Wajib)
Teaching format / class hours per week during semester:	<p>Class meeting</p> <ul style="list-style-type: none">• There are 14 weeks of lectures and 2 weeks of scheduled exams, in one semester• 3 credit in a week means<ul style="list-style-type: none">○ 3x50 min of lecture in a week○ 3x60 min of structural activities○ 3x60 min of individual studies <p>A week exam means 2 hours of exam and preparation activity</p>
Workload during semester:	42 hours of class meeting, 42 hours of structural activities, 42 hours of individual study, and 4 hours of exam; totals = 130 hours
Credit Points:	3 (= 4,5 ECTS)
Requirement (s):	-
Learning Goals/Competencies:	<p>Course Learning Outcomes (CLOs) are the following:</p> <p>CLO1 : Students can understand the concept using conventional symbols of classical physics.</p> <p>CLO2 : Students can develop physical intuition about the phenomena of mechanics and dynamics.</p> <p>CLO3 : Students can apply the concepts of mechanics and dynamics to everyday life</p> <p>Physics I support 6 ILOs, those are ILO 1, ILO2, ILO4, ILO7, ILO9 and ILO11</p> <p>ILO1 : Students will demonstrate an understanding of the core principles of physics (classical and modern) to identify physical problems in a system.</p>

	<p>ILO2 : Students will be able to analyze and formulate physical problems in a given system by using models and mathematical equations.</p> <p>ILO4 : Students will be able to employ mathematics, computational methods, and experiment in investigating and solving problems of physics.</p> <p>ILO7 : Students will have enthusiasm for lifelong learning and independently improve their capability to adapt themselves in the heterogeneous and dynamic environments.</p> <p>ILO9 : Students will demonstrate proficiency in Bahasa Indonesia and English, especially for scientific purposes.</p> <p>ILO11 : Students will be able to make appropriate decisions in solving problems using their physics knowledge.</p> <p>The correlation matrix between CLO and ILO is the following</p> <table border="1"> <thead> <tr> <th></th> <th>ILO 1</th> <th>ILO 2</th> <th>ILO 4</th> <th>ILO 7</th> <th>ILO 9</th> <th>ILO 11</th> </tr> </thead> <tbody> <tr> <th>CLO 1</th> <td>X</td> <td>X</td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <th>CLO 2</th> <td></td> <td>X</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <th>CLO 3</th> <td></td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>X</td> </tr> </tbody> </table>		ILO 1	ILO 2	ILO 4	ILO 7	ILO 9	ILO 11	CLO 1	X	X			X		CLO 2		X	X			X	CLO 3		X	X	X		X				
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Contents: (Deskripsi MK)	<table border="1"> <thead> <tr> <th>Topics</th> <th>Durasi Pertemuan kelas /minggu (jam)</th> <th>Jumlah Minggu</th> <th>Total duration of class meeting (jam)</th> </tr> </thead> <tbody> <tr> <td>Sejarah perkembangan Fisika</td> <td>3</td> <td>1</td> <td>3</td> </tr> <tr> <td>Keseimbangan pada benda tegar</td> <td>3</td> <td>4</td> <td>12</td> </tr> <tr> <td>Usaha dan energi</td> <td>3</td> <td>2</td> <td>6</td> </tr> <tr> <td>Gaya dan Momentum</td> <td>3</td> <td>2</td> <td>6</td> </tr> <tr> <td>Fluida statis dan dinamis</td> <td>3</td> <td>2</td> <td>6</td> </tr> <tr> <td>Gerak harmonik</td> <td>3</td> <td>1</td> <td>3</td> </tr> <tr> <td>Gelombang Mekanik</td> <td>3</td> <td>2</td> <td>6</td> </tr> </tbody> </table>	Topics	Durasi Pertemuan kelas /minggu (jam)	Jumlah Minggu	Total duration of class meeting (jam)	Sejarah perkembangan Fisika	3	1	3	Keseimbangan pada benda tegar	3	4	12	Usaha dan energi	3	2	6	Gaya dan Momentum	3	2	6	Fluida statis dan dinamis	3	2	6	Gerak harmonik	3	1	3	Gelombang Mekanik	3	2	6
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Soft Skill Attribute:	Etika (ethic), effort, communication and teamwork																																
Study/Exam Achievements:	<p>Kehadiran/partisipasi di kelas harus $\geq 80\%$ jumlah pertemuan. Bobot evaluasi penilaian adalah sebagai berikut .</p> <ul style="list-style-type: none"> • Ujian Akhir Semester (UAS) = 20% • Ujian Tengah Semester (UTS) = 20% • Kuis = 30% • Tugas = 30% <p>Dengan Nilai akhir didefinisikan sbb: A : 75 – 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99</p>																																
Forms of Media:	Whiteboard, projector																																
Learning Methods:	Lecturing, Homework																																
Literature(s):	<ol style="list-style-type: none"> 1) Tipler, P. A and Mosca, G. , 2008, Physics for Scientist and Engineer, Sixth Edition, WH Freeman and Company, New York, USA 2) Hallyday, D dkk, 2010, Fisika Dasar, Jilid 1, Edisi ketujuh, Penerbit Erlangga, Jakarta 3) Hyperphysics : http://hyperphysics.phy-astr.gsu.edu/hbase/index.html 																																

